

Model	Max. HP* (kW)	Max Input Torque (Lb.ft (nm))	Input Style#	Flywheel Housing Size	Ratio Inc. OR Dec.	Pump Adaptors	Pump Centre Distance	Approx. Weight kg
1PD06	495 (370)	1040 (1410)	P,S	1,2,3,4	1:1, 1.18:1, 1.25:1, 1.32:1, 1.40:1, 1.48:1, 1.57:1, 1.67:1	A,B,C,D,E,F	6.00"	100
2PD06	495 (370)	1040 (1410)	P,S	1,2,3,4	1:1, 1.18:1, 1.32:1,1.40:1, 1.48:1, 1.57:1, 1.67:1	A,B,C,D,E,F	12.00"	135
2PD08	725 (540)	1523 (2065)	P,S	1,2,3,4	1:1, 1.23:1, 1.34:1, 1.40:1,1.53:1^	A,B,C,D,E,F	16.00"	160
2PD10	950 (708)	1995 (2705)	P,S	1,2,3,4	1:1, 1.21:1, 1.29:1,1.38:1	A,B,C,D,E,F	21.00"	230
3PD06	495 (370)	1040 (1410)	P,S	1,2,3,4	1:1, 1.17:1, 1.29:1, 1.36:1, 1.52:1^	A,B,C,D	8.49" x 12.38"	175
3PD08	725 (540)	1523 (2065)	P,S	1,2,3,4	1:1, 1.23:1, 1.34:1, 1.40:1, 1.53:1^	A,B,C,D,E,F	13.29" x 12.00"	200
3PD10	950 (708)	1995 (2705)	P,S	1,2,3,4	1:1, 1.21:1, 1.29:1,1.38:1	A,B,C,D,E,F	15.91" x 18.00"	295
4PD08	725 (540)	1523 (2065)	P,S	1,2,3,4	1:1, 1.23:1, 1.34:1, 1.40:1, 1.53:1^	A,B,C,D,E,F	11.08" x 11.54"	240
4PD09	815 (608)	1710 (2320)	P,S	1,2,3,4	1:1, 1.20:1, 1.30:1, 1.40:1	A,B,C,D,E,F	12.18" x 13.26"	270
4PD11	1025 (765)	2153 (2920)	P,S	1,2,3,4	1:1, 1.16:1, 1.31:1,1.39:1	A,B,C,D,E,F	16.05" x 16.00"	375

* HP rating @ 2500RPM # P = Plate Driven S = Shaft Driven ^ Increaser only

SERVICE FACTOR

Prime Mover	Duration of Service	Driven Machine Load Classification Multiplier		
		Uniform	Moderate Shock	Heavy Shock
Electric Motor, Steam Turbine, or Hydraulic Motor	Occasional _ hr. per day	0.50	0.80	1.25
	Intermittent 3 hr. per day	0.80	1.00	1.50
	Over 3 hr. per day and incl. 10 hr. per day	1.00	1.25	1.75
	Over 10 hr. per day	1.25	1.50	2.00
Multi-Cylinder Internal Combustion Engine	Occasional _ hr. per day	0.80	1.00	1.50
	Intermittent 3 hr. per day	1.00	1.25	1.75
	Over 3 hr. per day and incl. 10 hr. per day	1.25	1.50	2.00
	Over 10 hr. per day	1.50	1.75	2.25
Single Cylinder Internal Combustion Engine	Occasional _ hr. per day	1.00	1.25	1.75
	Intermittent 3 hr. per day	1.25	1.50	2.00
	Over 3 hr. per day 10 hr. per day	1.50	1.75	2.25
	Over 10 hr. per day	1.75	2.00	2.50

Input Torque Calculation Maximum Rated Input Torque Max Application Torque X Service Factor

Caution: Always insure your powertrain is free of torsional vibrations. DURST is not responsible for damage or failure due to unaddressed torsional vibrations

CONVERSIONS AND USEFUL FORMULA

TORQUE

Nm x 0.7376 = lbf ft
lbf ft x 1.356 = Nm

POWER

kW x 1.341 = HP
HP x 0.7457 = kW

POWER TORQUE AND SPEED RELATIONSHIPS US UNITS

$$T = \frac{HP \times 5252}{RPM} \quad HP = \frac{T \times RPM}{5252} \quad RPM = \frac{HP \times 5252}{T}$$

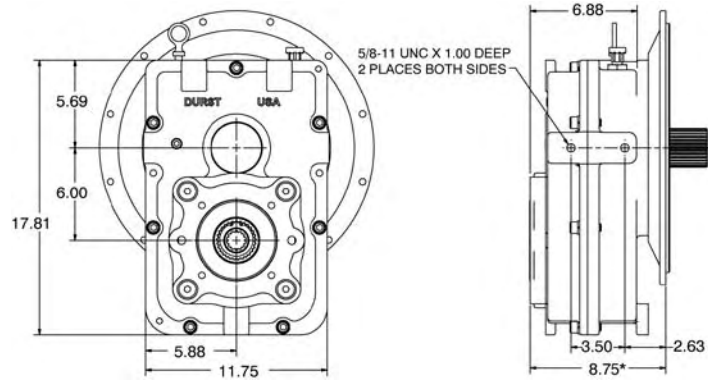
Where T = Torque Ft Lbs
HP = Horsepower
RPM = Revs Per Minute

POWER TORQUE AND SPEED RELATIONSHIPS ISO UNITS

$$T = \frac{kW \times 9549}{RPM} \quad kW = \frac{T \times RPM}{9549} \quad RPM = \frac{kW \times 9549}{T}$$

Where T = Torque Newton Metres
kW = Kilowatts
RPM = Revs Per Minute

MODEL 1PD

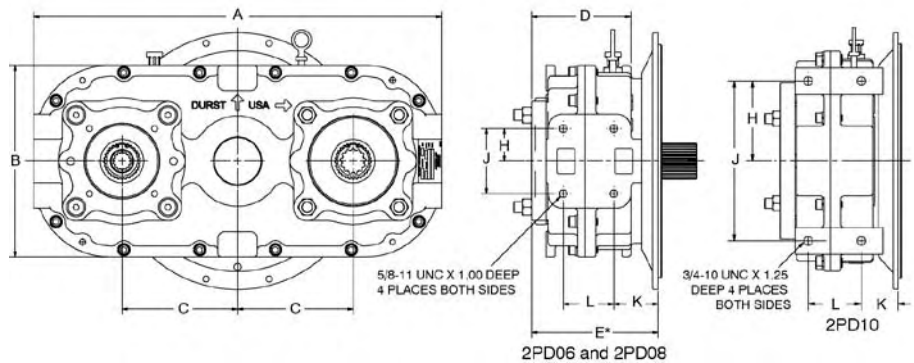


* Pads SAE D2 and E = 8.88" F = 9.25"

MODEL 2PD

	2PD06	2PD08	2PD10
A	23.00"	28.24"	37.00"
B	11.50"	13.25"	16.50"
C	6.00"	8.00"	10.50"
D	6.88"	6.88"	6.88"
E*	8.75"	8.75"	8.75"
H	2.25"	2.25"	6.00"
J	4.50"	4.50"	12.00"
K	2.62"	3.06"	2.75"
L	3.50"	3.50"	4.00"

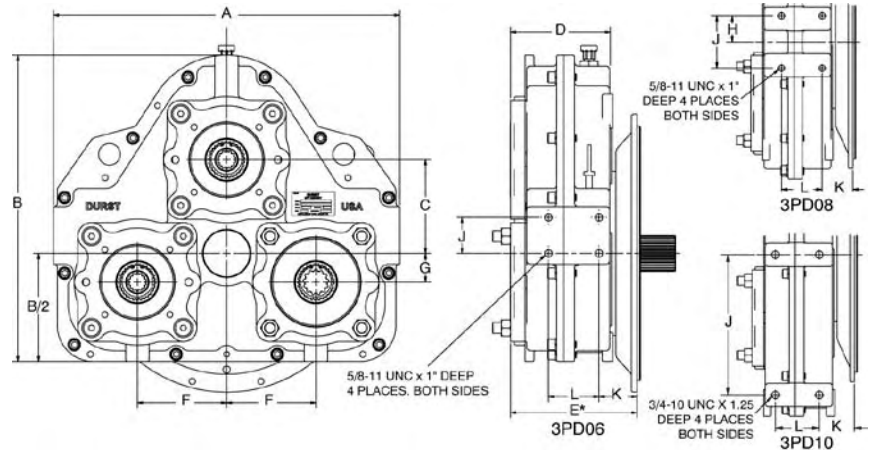
* Pads SAE D2 and E = 8.88" F = 9.25"



MODEL 3PD

	3PD06	3PD08	3PD10
A	24.00"	25.00"	33.50"
B	21.25"	26.75"	32.60"
B/2	7.50"	11.79"	13.18"
C	6.50"	8.00"	10.50"
D	6.88"	6.88"	6.88"
E*	8.75"	8.75"	8.75"
F	6.19"	6.00"	9.00"
G	1.99"	5.29"	5.41"
H	0	2.25"	0
J	2.50"	4.50"	12.00"
K	2.62"	2.63"	3.00"
L	3.50"	3.50"	3.75"

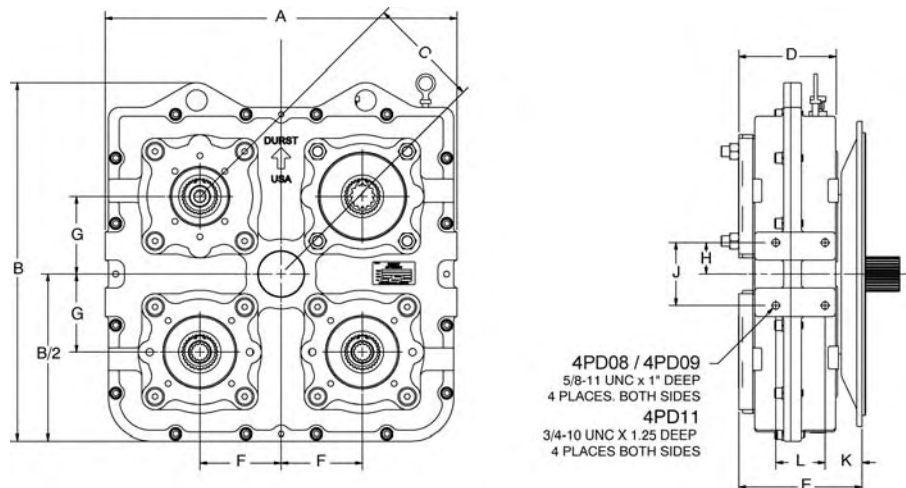
* Pads SAE D2 and E = 8.88" F = 9.25"



MODEL 4PD

	4PD08	4PD09	4PD11
A	25.00"	28.00"	32.25"
B	25.52"	28.02"	33.00"
B/2	11.88"	13.13"	16.50"
C	8.00"	9.00"	11.33"
D	6.88"	7.63"	6.88"
E*	8.75"	8.75"	8.75"
F	5.77"	6.63"	8.00"
G	5.54"	6.09"	8.03"
H	2.25"	4.75"	4.00"
J	4.50"	9.50"	8.00"
K	2.62"	3.13"	3.06"
L	3.50"	3.75"	4.00"

* Pads SAE D2 and E = 8.88" F = 9.25"



FEATURES AND BENEFITS

- **MODULAR DESIGN** – bearings and gears are self-contained within the housings. Input and output adaptors are not required to retain the bearings. Input and output adaptors can be added or changed anytime prior to unit installation.
- **SOS SPUR GEARS** – (solid-on-shaft) one-piece gear/shaft design provides consistent and uniform alignment. Reduces the total number of parts. Bearings pressed on gears simplify assembly.
- **SIMPLER TO SERVICE** – does not require pressing shafts into bearings and gears through the housings. Ball bearings do not require shimming or special adjustment of pump pads and input adapters.
- **FEWER PARTS** – adapter groups are reduced to a single set of input housings and output pads for the entire product line. Gears (31 total) are interchangeable across different models.
- **WET SPLINE** – oil passages built into the housings, along with the bearing design, create constant oil flow across splines and through bearings, resulting in longer, trouble-free operation.
- **DROP-IN REPLACEMENT** – footprint is interchangeable with present pump drives and with the competition.
- **HIGHER RATING** – gear geometry and large ball bearings result in a higher horsepower rating over the present product line.
- **SHORT LEAD TIME** – large inventory range held in Australia allows quick turn around of orders.

HYDRAULIC PUMP DRIVES

Durst has developed a family of gear drive products for use with hydraulic pumps and motors. These drives are available for mounting SAE standard hydraulic flanges and pump or motor shaft configurations directly to the gear drive unit. Models are available to mount directly to SAE flywheel housings, with or without clutches or can be driven through independent mounting arrangements.

THERMAL CAPACITY

The thermal capacity is defined as the power a gear drive will transmit continuously without overheating. Durst pump drives are used in such a wide variety of operating conditions that only mechanical ratings are shown. Under conditions such as restricted air circulation, high speeds and high loads, the thermal capacity may be less than the mechanical rating. Checking the thermal capacity is extremely important during the first few hours of operation. If the heat is being generated faster than it can be dissipated, severe damage may result and provisions for additional cooling should be provided. This may be accomplished by air circulation around the unit or by a recirculating oil system (see below). If additional cooling is not possible a larger capacity unit should be used.

OPTIONAL LUBE PUMP AND OIL COOLER.

Most models can be supplied with a centrally mounted gear pump for passing lube oil to a water or air cooled heat exchanger. We stock heat exchanger kits for most models.

RATINGS

The power ratings in this brochure are based upon the following operating conditions:

- Continuous service (8 hours/day).
- Uniform operating loads.
- Maximum oil sump temperature of 93°C (200°F).

Ratings are based upon component life using a 1:1 ratio @ 2500 rpm for a 2000 hour L-10 life. The full unit rating can be loaded through one pump pad provided the total loading does not exceed unit rating. Durst pump drives are engineered for an optimum balance between mechanical and thermal capacities. Durst drives are designed to accept 100 percent starting overloads or momentary peaks from electric motor driven applications.

RPM LIMITATIONS

For shaft speeds in excess of 3000 rpm consult factory.

ENGINE HOUSING ADAPTORS

Housing adaptors SAE 1, 2, 3 & 4 are available for all models.

HYDRAULIC PUMP ADAPTORS

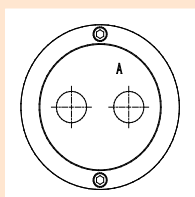
Pump rotation is anti-enginewise. Standard available pump adaptors and sleeves include SAE A, B, C, D & E.

REDUCED PUMP SPLINE WEAR

All Durst models now feature a new lubrication system where the lubricant is directed through the centre of the gear to the gear shafts across the pump spline intersections. This feature ensures that premature spline wear caused by fretting will not occur.

OPTIONAL LUBE PUMP

OIL OUT BACK TO GEARBOX THROUGH COOLER



OIL IN FROM GEARBOX



FLYWHEEL AND HOUSING ADAPTORS

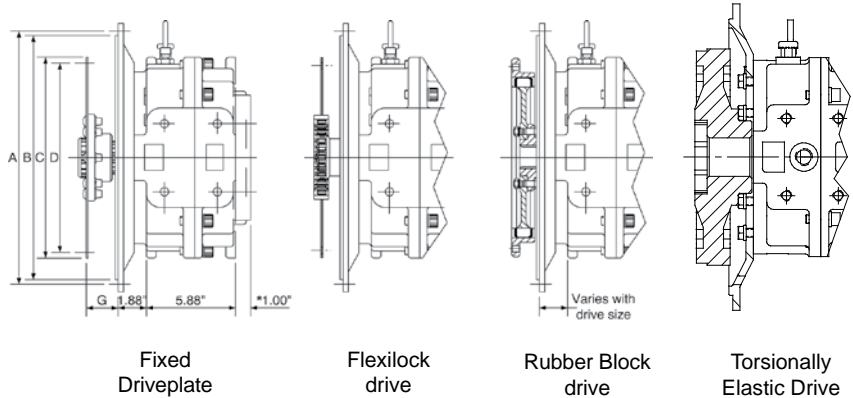
SAE Flywheel Housing Options

SAE No.	A	B
1	20.875"	20.125"
2	18.375"	17.625"
3	16.875"	16.125"
4	15.000"	14.250"

SAE Drive Plate Options

SAE No.	C	D	G
8	10.375"	9.625"	2.438"
10	12.375"	11.625"	2.125"
11 1/2	13.875"	13.125"	1.562"
14	18.375"	17.250"	1.000"

* D2, E and F Pads are thicker



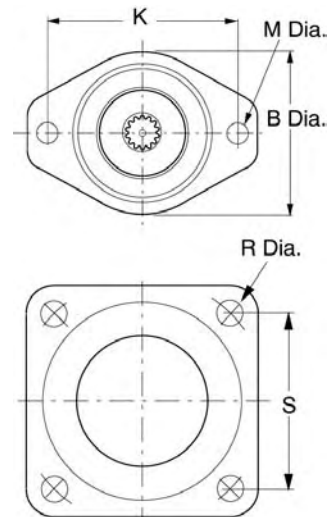
SAE PUMP AND SHAFT ADAPTORS

SAE Pump Adaptor Plates

Mounting Flange	2 Bolt type		4 Bolt Type		
	K	M	B	S	R
Shaft Size					
A	4.188"	0.438"	3.750"	-	-
B	5.750"	0.562"	4.750"	3.536"	0.562"
C	7.125"	0.688"	5.810"	4.508"	0.562"
D	9.00"	0.812"	7.880"	6.364"	0.812"
E	12.500"	1.062"	10.620"	8.839"	0.812"
F	13.781"	1.062"	11.750"	9.745"	1.062"

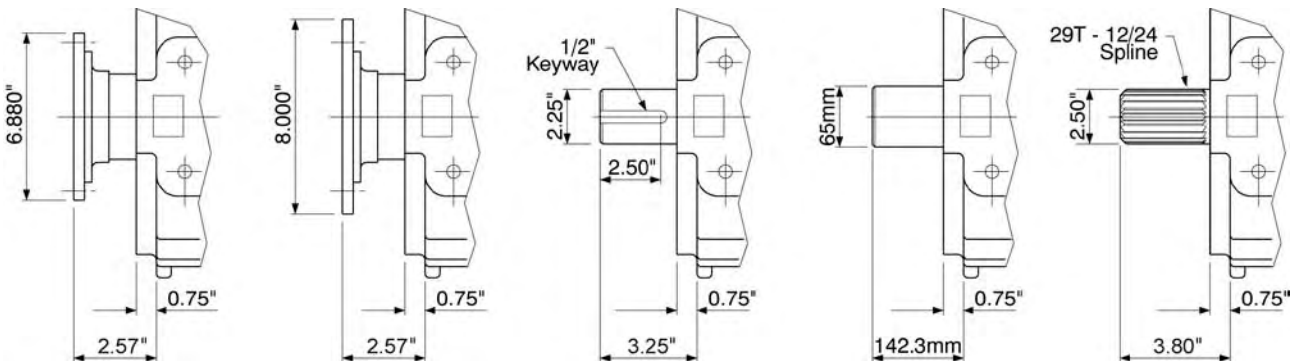
SAE Shaft Adaptors

SAE	Spline Teeth & Pitch
A	9T - 16/32
B	13T - 16/32
BB	15T - 16/32
C	14T - 12/24
CC	17T - 12/24
D	13T - 8/16
E	13T - 8/16
F	15T - 8/16
CS	21T - 16/32



NOTE: PUMP ROTATION IS OPPOSITE TO INPUT ROTATION

INPUT SHAFT / FLANGE OPTIONS



Companion Flange Spicer 1610 series

Companion Flange Spicer 1810 series

Ø2.25" Straight Shaft with 1/2" key

Ø65mm Straight Shaft with no key

29 Tooth 12/24 Splined Shaft

Other Shaft Option Available. Specials Made To Order.

OEM Dynamics stock an extensive range of Durst Next Generation Hydraulic Pump Drives, while also offering Custom Engineered Solutions to compliment standard Durst Pump Drive unit configurations. Whether you need to mount a non-SAE standard hydraulic pump, fit special input/output shafts or couplings, fit hydraulic pumps or shafts on either side of the Pump Drive Unit or install a recirculating lubrication pump, filter and oil cooler, we can help. From the smallest modification to a complete system, we can analyse, improve, and design it using the latest computer-assisted design hardware. Our experienced in-house mechanical engineering, design and manufacturing team utilize CAD, 3D Engineering Modelling and Finite Element Analysis (FEA) programs.

Some examples of the custom designed and built Durst Hydraulic Pump Drive projects that have been carried out at our Ballina NSW facility include:

FIVE PUMP GEARBOX with through drive shaft

The unit below (shown from both sides) is a custom designed and built Durst Model 5PD10 (Special) Five Pump Drive unit that OEM Dynamics designed and re-engineered using a standard Durst Model 3PD10 Triple Drive unit for a Dredging Machine application. It is fitted with a total of 5 x Hydraulic Pump Mounting Pads (1 x SAE-D and 2 x SAE-C Mounting Pads) while 2 x additional Output Ports have been blanked off for possible future use. There is also an Oil Recirculating Lubrication Pump, Oil Filter and Water Cooled Oil Cooler fitted. To complete this very unique unit, OEM Dynamics have also designed and fitted a Through Drive Shaft to drive a 75kW (100Hp) Centrifugal Water Pump.



ENGINE
INPUT SIDE



PUMP OUTPUT
SIDE

TWO PUMP GEARBOX WITH DOG CLUTCHES

This drive is a custom designed and built Durst Model 2PD06 Double Pump Drive unit that OEM Dynamics re-engineered to allow the fitting of 2 x OEM Dynamics Model HH Dog Clutches with SAE-C Hydraulic Pump Mounting pads, which will allow each pump to be individually engaged and disengaged, while the unit has also been fitted with a Torsionally Resistant Input Drive Coupling for a Vehicle River Crossing Ferry application.



THREE PUMP GEARBOX

This drive is a custom designed and built Durst Model 3PD10 Triple Pump Drive unit OEM Dynamics re-engineered to fit a Bosch Rexroth A4CSG500 Hydraulic Pump for a Dredging Machine application. It has a 405mm diameter, 8 Bolt mounting pad and 80mm diameter splined drive shaft, while the unit is also fitted with 1 x SAE-D Hydraulic Pump Pad with the 3rd Pump Pad being blanked off for possible future use. An Oil Recirculating Lubrication System comprising of a Pump, Oil Filter and Water Cooled Oil Cooler has also been fitted.



To find out more about OEM Dynamics Custom Engineering Solutions for Durst Hydraulic Pump Drives, contact our Customer Support Department located at our Ballina NSW office.